

# MARINE CORPS WARFIGHTING LABORATORY

The purpose of **Transportable Transponder Landing System (TTLS)** is to provide a rapidly deployable (HMMWV mounted or smaller), all weather, precision, terminal air traffic control capability—to be employed under instrument flight rules (IFR) conditions.

**Background:** During April 2001, the Marine Air Board identified a requirement for a non-emitting precision approach landing capability. Such a system would be used to provide an initial tactical precision approach capability with reduced footprint and electronic signature.

**Description:** The TTLS can be packed into a single C-130 aircraft, driven off and rapidly employed to provide Category I guidance to both military and civilian aircraft. In addition to the ILS-emulation capability, the TTLS also presents a Precision Approach Radar (PAR) display to the operator enabling Ground Controlled Approaches (GCA). With a single system, pilots can be guided to safe landings whether they are ILS-capable or not. A spring 2004 limited technical assessment (LTA) will be conducted at the MAWTS-1 WTI class in Yuma, AZ as a proof of concept.

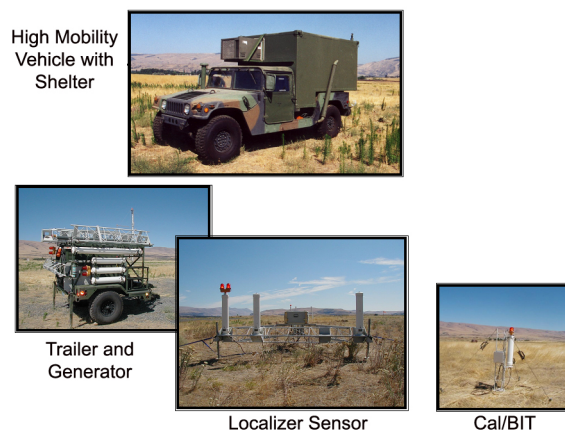
NAVAIR (PMA213) and Advanced Navigation and Positioning Corporation (ANPC) used fiscal year 2002 funding to develop and test the Link 4A data-link guidance output and multiple aircraft tracking improvements to TTLS. The fiscal year 2003 funding was used to further refine and develop unique capabilities in support of Expeditionary Maneuver Warfare (EMW). These include multiple aircraft tracking and guidance, reciprocal approaches, and 360-degree tracking and control. The fiscal year 2004 funding will be used to fine tune system design, system miniaturization, and system interoperability with other air traffic control systems.

## Specifications:

- ° Provide MEU Commander with all weather, precision approach Air Traffic Control system for

## TRANSPORTABLE TRANSPONDER LANDING SYSTEM

### *fact sheet*



shore-based aviation—in one HMMWV and trailer.

- ° Precision aircraft tracking system
- ° ILS emulated guidance
- ° Cat I precision approach at austere fields
- ° No new equipment required onboard aircraft
- ° Rapid deployment

**Deliverable Product:** The prototype ANPC system, Rhino II, successfully completed a proof of concept demonstration in December 2003. The next deliverable will be an upgraded Rhino II prototype system for use during the spring LTA.

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DTD: December 24, 2003



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